

GLM:ach 06/07/05 374323.doc # E-059-2000/0-US-01  
PATENT

Attorney Reference Number 4239-54279-01  
Application Number 09/595,580

**Remarks:**

Reconsideration of the application is respectfully requested in view of the following remarks. Claims 1-6, 8-51, 61-65, and 71-96 remain in the application. No claims have been allowed. Claims 1, 29, 31, 33, 36, 47, 50, 61, 64, and 71 are independent.

***Interview***

Applicants thank the Examiner for her time during a telephonic phone interview on July 3, 2005. Claim 1 was discussed, and Applicants agreed to provide written remarks to address the rejections, including specific citations to the Application that support the claim language.

***Patentability of Claims 1-6, 8-51, 61-65, and 71-96 under § 112, First Paragraph  
(New Matter)***

The Action rejects claims 1-6, 8-51, 61-65, and 71-96 as unpatentable for failing to comply with the written description requirement. Specifically, the Action asserts that “as determined by comparing effectiveness of the multivariate nonlinear model with effectiveness of other multivariate nonlinear models constructed for other subset gene combinations” is not supported by the specification as filed. Applicants respectfully request reconsideration. Applicants can satisfy the written description requirement by showing that the patent specification describes the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventors had possession of the claimed invention. *See* MPEP §2163.1.

*The application's description of ordering supports a claim of “comparing effectiveness of the . . . model.”* Page 17, lines 7-8 of the Application state:

Effectiveness of the model is indicated by the size of the bar.

Elsewhere, at page 17, lines 21-22, the Application states:

As shown, the bars are ordered (i.e., the more effective models are shown at the top).

A description of “the bars are ordered” supports the “comparing” language. One of ordinary skill in the art would recognize that the inventors were in possession of the “comparing” technique because ordering the bars by effectiveness involves comparing the effectiveness of the models.

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*The described models are for different subset gene combinations, so the description supports "comparing . . . with effectiveness of other multivariate nonlinear models constructed for other subset gene combinations." Page 17, lines 5-7 of the Application describe:*

Each of the bars represents a set of predictive elements<sup>1</sup> used in a particular multivariate nonlinear model to predict the predicted gene of box 1106.

Further, FIG. 11 shows that the gene combinations include G<sub>5</sub> and G<sub>13</sub>; G<sub>4</sub> and G<sub>6</sub>; G<sub>4</sub> and G<sub>10</sub>; and so forth, which are subset gene combinations of the genes listed in the legend 1160 (G<sub>1</sub>, G<sub>2</sub>, and G<sub>3</sub>-G<sub>n</sub>).

The Application sometimes uses the term "permutation," which supports "subset." For example, boxes 1208 and 1212 of FIG. 12 describe, "For the next permutation of predictive elements, starting with the first" and "construct nonlinear model." The accompanying text at page 18, line 15 further explains, "for possible combinations of one, two, and three predictive elements." Thus, "other subset gene combinations" is supported.

*The application describes nonlinear multivariate models.* Page 17, line 6 describes that "each of the bars represents a set of predictive elements used in a particular multivariate nonlinear model . . ." The description in question thus supports the "nonlinear multivariate models" language.

For these reasons, the language of claim 1 is supported in the application, particularly with reference to FIG. 11 and the text describing the "Exemplary User Interface for Presenting Results" at page 17 of the Application.

***Patentability of Claims 29-30 under § 112, First Paragraph (New Matter)***

In its rejection of claim 1, the Action also rejects claims 29-30 using the same grounds. The word "comparing" does appear in claim 29. However, Applicants note that the comparing language was in the claim when it the Application was filed, at page 46, line 8. Accordingly, the comparing language is presumptively supported in the Application as filed. (See MPEP § 2163 I.A). A small amendment to add the language "groups of" was made in the amendment filed on February 9, 2004; however the "groups of" language is not at issue.

<sup>1</sup> Page 13, line 9 the Application describes that predictive elements include "gene expression levels, experimental conditions, or both."

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Further, for the convenience of the Office, Applications point out that an exemplary implementation of the “comparing results of the multivariate nonlinear predictors with gene expression level observations for the target gene” technology is described at Page 12, lines 9-11, which describe:

608 can comprise predicting gene expression with the multivariate nonlinear model, then comparing predicted gene expression with observed gene expression.

The description thus supports “comparing results of the multivariate nonlinear predictors with gene expression level observations for the target gene,” and the new matter rejection should be withdrawn.

***Patentability of Claims 31-51, 61 and 64-65 under § 112, First Paragraph (New Matter)***

In its rejection of claim 1, the Action also rejects claims 31-51, 61 and 64-65 using the same grounds. However, the “comparing” language of claim 1 does not appear in these claims. So, the new matter rejection does not apply to claims 31-51, 61, and 64-65.

Accordingly, claims 31-51, 61, and 64-65 are allowable at this time.

***Patentability of Claims 71-96 under § 112, First Paragraph (New Matter)***

In its rejection of claim 1, the Action also rejects claims 71-96 under the same grounds. However, the “comparing” language of claim 1 does not appear in these claims. So, the new matter rejection for claim 1 does not apply to claims 71-96.

The Action also advances a separate rejection of claim 71 as unpatentable for failing to comply with the written description requirement. Specifically, the Action asserts that “presenting results of the ordering, wherein the results indicate that observed gene expression levels for a permutation subset of genes associated with a higher-ranking multivariate non-linear model have a higher effectiveness in predicting . . .” is not supported by the specification. Applicants respectfully request reconsideration.

*The Application's description of ordered bars for models supports the “presenting results of the ordering” of claim 71.* In its description of FIG. 11, the Application states at page 17, lines 21-22:

As shown, the bars are ordered (i.e., the more effective models are shown at the top).

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“As shown, the bars are ordered” supports “presenting results of the ordering.”

*The Application's description of predictive elements for FIG. 11 supports “the results indicate that observed gene expression levels for a permutation subset of genes associated with a higher-ranking multivariate non-linear model have a higher effectiveness in predicting.”* In the text describing FIG. 11, at page 17, lines 5-7, the Application states:

Each of the bars represents a set of predictive elements used in a particular multivariate nonlinear model to predict the predicted gene of box 1106.

And elsewhere at page 13, line 9 the Application describes that predictive elements include “gene expression levels, experimental conditions, or both.” FIG. 11 further indicates that the bars are for permutation subsets of the genes (e.g., G<sub>5</sub> and G<sub>13</sub>; G<sub>4</sub> and G<sub>6</sub>; G<sub>4</sub> and G<sub>10</sub>; and so forth). Therefore, the Application supports “observed gene expression levels for permutation subsets of genes.”

*The Application's description of the bars in FIG. 11 supports “have a higher effectiveness in predicting.”* Page 17, lines 7-8 of the Application state:

Effectiveness of the model is indicated by the size of the bar.

The recited language is thus supported by the specification as filed. Therefore claim 71 and its dependent claims, 72-96, are allowable at this time.

***Patentability of Claim 72 under § 112, First Paragraph (New Matter)***

The Action rejects claim 72 as unpatentable for failing to comply with the written description requirement. Specifically, the Action asserts that “wherein the higher-ranking multivariate nonlinear model having the higher effectiveness of the two models is presented as indicating a higher relatedness between the genes . . .” is not supported by the specification.

Applicants respectfully request reconsideration and point to FIG. 11 and the accompanying description at page 17, lines 21-22. FIG. 11 includes the caption “relatedness,” with vertical markers for the values 0, 0.25, and 0.5, 0.75. Some of the bars indicate a higher relatedness than the others, and the genes in question are shown in the bars. The language is thus supported by the specification as filed, and claim 72 is allowable at this time.

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***Request for Interview***

If any issues remain, the Examiner is formally requested to contact the undersigned attorney prior to issuance of the next Office Action in order to arrange a telephonic interview. It is believed that a brief discussion of the merits of the present application may expedite prosecution. Applicants submit the foregoing formal Amendment so that the Examiner may fully evaluate Applicants' position, thereby enabling the interview to be more focused.

This request is being submitted under MPEP § 713.01, which indicates that an interview may be arranged in advance by a written request.


***Conclusion***

The claims in their present form should now be allowable. Such action is respectfully requested.

Respectfully submitted,

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